**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 28- 32: **Transmission media**

**Networks are classified according to below and we will study the following:**

1. Network Categories: LAN, WAN
2. Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet
3. Network communication standards
4. Network hardware and software
5. **Transmission media**
6. Network security

**Transmission media**

**Physical Transmission**

**Twisted – pair cable**

1. What is twisted pair cable?

Contains only two wires

1. Why do new networks use CAT 5E or CAT 6 rather than CAT 3?

Poorly shielded from electromagnetic  
interference

1. What are some disadvantages of CAT 5E and why is it used in so many installations?

Only one network signal can travel along a cable at a time

1. What type of networks is this cable largely used in?

Used in star networks

**Coaxial Cable**

1. Describe the characteristics of this cable.

Contains only two wires, Carry data 185 metres at 10 Mbps

1. What network is it used in?

Used in bus networks where all data travels in both directions away from any computer that originates a message.

**Fibre-optic cable**

1. Describe the characteristics of this cable.

Glass or plastic core that transmits Optical (laser light) signals

1. Why is fibre-optic cable often used to connect major switches inside buildings as well as between buildings.

Because it is immune to electromagnetic interference and.

1. What are the disadvantages of this cable?

It is expensive

**Wireless Transmission,** p 30

**Radio Waves**

1. What is required for radio transmissions to occur?

For radio transmissions to occur a transmitter and a receiver is required

1. Wi-Fi networks use radio waves. What are its advantages over a cable network and what are its disadvantages?

More flexible than cable but slower

1. Describe the characteristics of Bluetooth.

Bluetooth uses short-range radio waves to transmit data, up to 10 mtrs. Data transfer of 2Mbps c/f Wi-Fi of up t0 108 Mbps

**Microwaves**

1. Describe the characteristics of microwave transmission.

Very high data rates, eg. 4 Mbps over 5 kms.

1. What are the limitations of microwave transmission?

Require line-of-sight transmission

**Satellite**

1. Satellite transmission can be in what forms?

In the form of radio waves or microwaves

1. What are the limitations of this form of transmission?

distance the waves have to travel to the satellite & back & among the most expensive ways of gaining broadband Internet access

1. Who might use this form of transmission?

in rural areas it may be the only choice

**Infra-red**

1. Describe the characteristics of infra-red transmission.

Uses light waves & requires line-of sight

1. Why is radio wireless networking preferable to infra-red wireless networking?

Slow data transfer rates but can be useful with hand held computers with this port to communicate to printers or pc